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ADJUSTING FOR SPECIFIC GRAVITY

In recent years, I have noticed a trend in articles in various journals that deal with determining strength values of wood after some type of treatment or activity. After the strength properties have been determined, the specific gravity is determined for the test specimens. If there is a difference between the specific gravities of the controls and treated specimens, the strength values are adjusted accordingly. This is sometimes the correct procedure and sometimes the wrong thing to do.

As an example, let's discuss wood from trees that died as a result of insect attack (gypsy moth, mountain pine beetle, southern pine beetle, etc.). If the specific gravity of wood from dead trees is less than the green control specific gravity from living trees, the strength values of the wood from the dead trees should not be raised to correspond to the higher specific gravity. If the specific gravity of the dead trees while they were alive had been lower than the green controls, then the strength values should be adjusted for that difference. If the specific gravity of the dead trees while they were alive had been equal to the specific gravity of the green controls, then no adjustment should be made to the strength values. The drop in specific gravity was the result of the treatment (i.e., deterioration). Therefore, to factor out the specific gravity would be to factor out the effects of the treatment and compare control to control.

Let's take another example. The treated specimens and the controls have the same final specific gravity and strength properties. The conclusion may be that the treatment did not affect the strength properties of the wood. This may be true and it may be false. If the pretreatment specific gravity of the treated specimens had been lower or higher than the specific gravity of the controls, the treatment could have changed the properties of the wood and brought it close to the properties of the control.

My point in this editorial is to say that strength properties should be corrected only for differences in pretreatment specific gravities. If the pretreatment specific gravities can not be determined, then the strength properties and specific gravities should be reported as determined and left at that.

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